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REVIEW OF PROBLEMS FOR MEASURING AND ANALYZING INTERNAL AND INTERNATIONAL MIGRATION STATISTICS

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I. INTRODUCTION

A. Perspectives of African Governments on Migration

1. One aspect of population in Africa that Governments have overwhelmingly expressed dissatisfaction with is the spatial distribution of their populations, including the role of migration in the resulting spatial configurations. For example, 74 per cent of the countries that responded to the Fifth Inquiry of the United Nations conducted around 1981 perceived their spatial distribution as inappropriate. 1) Similarly, according to the preliminary results of the Sixth Inquiry of the United Nations, conducted between 1987 and 1988, 77 per cent of the 26 African countries that responded viewed their current patterns of spatial population distribution as inappropriate, including 81 per cent that considered the growth rate of metropolitan areas which includes a substantial migration component as inappropriate. 2)

2. Relative to international migration, monitoring reviews of the United Nations have reported that a majority of African countries are satisfied with their current patterns of immigration and emigration. However, a sizeable and growing number consider the rates of immigration (eg., Côte d'Ivoire, Gabon, The Gambia, Ghana, Libya, Morocco, Sao Tome, Seychelles, Somalia and Zimbabwe) and emigration (eg. Angola, Benin, Lesotho, Mali, Mauritania, Somalia and Uganda) as too high. In addition, the influx of refugees is considered a problem in Botswana, Djibouti, Somalia, Sudan, Uganda, Tanzania and Zaire. 3)

B. Uses of internal and international migration data

3. Data on migration can be used to analyze the movements of population from areas of origin (eg. rural and/or economically depressed regions) to areas of destination (eg., urban and/or economically prosperous regions). In this connection, it should be noted that one important recent characteristic of spatial population distribution/redistribution in Africa countries is the rapid rates of growth of urban localities, especially the primate cities. Moreover, movements have also been occurring from less to more endowed regions, for example, the seasonal migration from the drier inland countries of West Africa to the coastal more developed countries. A minimum requirement for understanding these movements include data on the volumes and characteristics of persons involved.

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1) Economic Commision for Africa, Fifth Inquiry Among Governments: ECA Member States, Perceptions in Demographic Trends in Relations to Development as of 1982 Addis Ababa: 1984.

2) Preliminary Analysis of the Sixth Inquiry by ECA Population Division

3) United Nations, Population Policy Briefs: The Current Situation in Developing Countries, 1985 New York: 1986.

4. Formulation, implementation and monitoring of development plans and programmes are activities where data on migration are also required. Regional planners in particular have to take into account the characteristics, patterns and trends of migration in socio-economic development planning.

5. In addition, data on migration are needed for the preparations of national, subnational and sectoral population estimates and projections as well as for analytical studies bearing on determinants, consequences and other aspects of migration.

C. Objectives of paper

6. This paper attempts a review of problems of measurement and analysis of internal and international migration statistics in Africa. It should be noted that internal and international migration are similar in many respect. For example, both involve changes in residence either on a short- or long-term basis. Their determinants (especially the dominance of economic factors) and consequences for areas of origin and destination are identical. However, there are subtle differences between the two movements. Hence, to keep the discussion within manageable limits, problems on similar areas have been reviewed for both movements. In areas where there are marked differences separate reviews have been undertaken.

7. The paper consists of two main sections: Section II on problems of migration measurement systems and Section III on problems of migration analysis.

II. PROBLEMS OF MIGRATION MEASUREMENT SYSTEMS IN AFRICA

8. The three main sources of migration data are population censuses, sample surveys and administrative records (for example, population registers and border collection systems). However, in Africa, sample surveys and especially population censuses are the most popular sources for the collection of migration data. In this connection, a survey in 1976 and 1977 by the UN on internal migration data collection systems showed that for Africa 88 per cent of the 25 responding countries derived their data from field inquiries (i.e., population censuses and sample surveys). 4)

9. This present review of the problems of migration measurement systems is organized around two sub-sections: sub-sections A focuses on data collection systems and sub-section B on definitions, concepts and classifications.

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4) United Nations, Statistics on Internal Migration, A Technical Report, studies in Methods, Series F. No. 23 (New York, 1978).

A. Problems of Data Collection Systems

1. Population censuses:

10. This data collection system can be used to collect two types of migration statistics and measures: those from the migration questions, and those from other information such as the age and sex data.

11. The major problem of population censuses as sources of migration data is the limited amount of questions - usually one, sometimes two or three - that are included. 5) Consequently, it is usually not possible from census data to delineate various types of migration patterns and to use the information to inquire into any details about dynamic aspects of migration such as determinants and consequences. In addition, not many African countries capitalize on one important advantage of population censuses - namely cross-classification of the data on migrants (non-migrants) with the other socio-economic (eg. educational attainment and occupational status) data collected.

12. Among the spatial and residence problems of censuses when used for the collection of migration statistics are the enumeration methods - de facto and de jure - adopted and the classification of locality.

a. Problems of the enumeration methods

13. The basis of the enumeration in population censuses (and also sample surveys), that is, whether it is the de facto (i.e., the present-in-area) or the de jure (place of usual residence) approach, has a bearing on the quality of the migration data collected.

14. The de facto approach is the enumeration method universally used, including Africa, although the French-speaking countries usually have a preference for the de jure approach. For tabulation of migration data for use in socio-economic planning and programmes, the de jure population distribution is preferred. However, the concept is more difficult to understand by enumerators and respondents than the de facto concept. Hence, in many cases, the use of the dejure concept leads to large coverage errors because of the probability for some members of households to be enumerated more than once or not at all. 6) Prominent among the population groups likely to be omitted are those in urban areas with no definable places of residence, that is, the 'floating' population.

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5) K.C. Zachariah, "Measurement of Internal Migration from Census Data," in A.A. Brown and E. Neuberger (eds.) Internal Migration (New York: Academic Press, 1977)

6) Economic Commission for Africa, Study on Methods and Problems of the 1970 Round of African Population and Housing Censuses, E/CN.14/CAS.10/15 Addis Ababa : 1977.

15. On the other hand, the de facto approach, although it reduces the probability of coverage error, being a fairly simple concept, introduces distortions in the population defined as migrants, if the number of persons involved in short-term movements, away from their places of usual residences - eg. mothers who go to their home towns to give birth or persons away at home villages and towns during festive occasions such as christmas-is high.

16. These and other issues have been succintly stated in the United Nations recommendations for population and housing censuses:

> with the growing interest in information on households and families and on internal migration, it is becoming increasingly desirable to prepare tabulations on the basis of usual residence rather than on the basis of place where present, since the latter is often temporary and so not useful for the investigation of the above-mentioned topics. Also, although it is comparatively simpler to enumerate each person where present on the day of the census and to use a present-in-area population distribution, a usual-residence is likely to be more accurate than a present-in-area distribution, if the time required for enumeration is so long as to permit considerable movement of persons during the interval.7)

b. Concepts, classifications and definitions of localities:

17. Another problem of population censuses (as well as simple surveys) as sources of migration data in Africa as sources of migration data, when the migration defining area are localities rather than administrative divisions is the classifications and definitions of rural localities.

18. The classifications and definitions of rural localities present problems. For one thing, frequent charges occur in rural settlements through fragmentation, relocation and disappearance. For another, in certain parts of Africa, for example, Malawi and Botswana, another concept is used in place of a locality, that is, a distinct population cluster with definable boundaries. This is the village concept. The village usually has no definable boundaries and comprises more than one population cluster, features that complicate identification, mapping and enumeration.8)

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7) United Nations, Principles and Recommendations for Population and Housing Censuses, Statistical Papers, Series M, No. 67, New York: 1980 para.

8) Economic Commission for Africa, "Classificatins, Definitions and concepts of locality in Africa", Statistical INformation Bulletin for Africa, E/ECA/SIB/16, No. 16.

2. Sample surveys:

19. Sample surveys provide the opportunity for more detailed study of various aspects of internal and international migration, e.g. characteristics, patterns and trends as well as determinants and consequences compared with population censuses. However, this method of data collection for migration statistics has inherent deficiencies and disadvantages.

a. Methodological problems of sample surveys:

20. Among the principal problems of sample surveys for measuring migration is generating a representative sample of migrants at a reasonable cost.9) Problems of selection of representative samples of migrants and related population groups arise from the fact that migrants from a particular origin may go to different localities. Also, some migrants return to their localities of origin. In addition, a significant proportion of migrants feature prominently among the 'floating' populations, whose enumerations pose certain problems. As well, in a migration survey for which the definition of migrants encompasses both temporal and spatial criteria, the selection of a representative sample, taking into account the above-mentioned and other criteria, presents survey statisticians with a number of problems.

21. In addition, in a number of African countries, field inquiries such as migration surveys have been confronted by other difficulties, such as, the lack of appropriate sampling frames because of: inadequate and out-of-date maps, old population census data and lack of street names in rural areas and certain parts of urban areas.

22. In the past African researchers on migration faced with these daunting problems have: (a) purposively selected their samples and/or (b) relied on relatively small sample sizes usually from either rural or urban areas.

23. Surveys based on unrepresentative and/or small sample sizes reduce the value of the findings for population policy formulation and generalization. This should not be taken, however, as implying that surveys based on purposive sampling have no use. For example, Goldstein have opined that:

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9) S. Goldstein and A. Goldstein, "Surveys on Migration in Developing countries. A Methodological Review, " Paper of the East-West Centre, Hondulu: 1981;
J.T. Fawcett and Fred Arnold, "The Role of Surveys in the study of International Migration: An Appraisal," International Migration Review, (Winter 1987) vol 21; and Sally Findley, "Migration Survey Methodologies: A review of design issues", IUSSP Papers No. 20 (1982).

While losing the advantages that representative national or regional samples provide for attention to non-migrants as well as migrants, more purposive samples may prove more valuable for the assessment of the causes and consequences of population movement... 10)

24. However, for certain types of migration analyses, it has been argued that the longitudinal sample survey method is the best data collection vehicle. In particular this is the case for analyses requiring not just cross-sectional information but also data about the migrant (non-migrant) and the socio-economic contexts of the migration - before and after the move.

25. The major problems of the longitudinal sample survey method apart from recall lapse, include attrition of the sample populations through migration itself as well as mortality. 11) Moreover, this survey technique makes heavy demand on limited resources: manpower and finance.

26. With respect to internatinal migration, the choice of a representative sample is also confronted by a peculiar problem the presence of undocumented immigrants among the relevant population group.

27. In addition, many African survey-based studies of international migration have focussed mainly on high out-migration and in-migration areas or entry/exit points because they easily facilitate the selection of an adequate sample. The point made about difficulties of generalizing the findings of such purposive surveys as well as their advantages in certain circumstances apply. Also, such surveys, because they miss two important related migration groups - those who decide not to emigrate and return immigrants - may present distorted picture about the consequences of these movements.

3. Administrative sources:

28. The other source of migration data in African countries are administrative records such as permanent population registers and border collection systems. At the moment, no viable permanent population registers are maintained in African countries, from which it is possible to derive statistical information. It

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10) Sidney Goldstein, "Research Priorities and Data Needs for Establishing and Evaluating Population Redistribution Policies," United Nations, Population Distribution Policies in Development Planning, ST/ECA/SER. A/75 (New York: 1981.

11) Joel W. Gregory, "Pitfalls and Potentials in Retrospective Survey Data for the Historical study of African Migration": in African Hostorical Demography, Proceedings of a seminar held at the centre of African studies, University of Edinburgh, April 1977.

should be noted in this respect that the maintenance of such a system in African countries - judging from the experience of other countries where they work - would make heavy demand on limited administrative and financial resources.

29. Relative to border collection systems for the generation of international migration data, it is pertinent to observe that elements of such a system exist especially at air frontier points in almost all African countries. However, almost all are plagued with problems. Foremost, is the gross incomplete coverage of persons who cross land frontiers. Two factors are responsible for incomplete coverage: because the boundaries were arbitrarily demarcated during the colonial period they straddle ethnic groups, and also because of their extensive lengths, most not protected by natural terrains.

4. Indirect methods

30. The more recent indirect analyses of migration are based on information from censuses such as age and sex distribution. The approach involves evaluating the expected inter censal population growth discounting migration and comparing the result with the actual growth of the population in order to infer net migration between the censuses. The problem with this approach is the derivation of the expected intercensal population, against the background of the absence of usable vital registration data in all but a handful of African countries. Given this situation analysts have been forced to use survival probability schedule from two censuses or from life tables. The results of the former technique are affected by age misreporting and coverage errors.

31. The practice of acquiring data on emigrants from the birth place data of receiving countries could also be discussed under this topic. The problems encountered by African countries in this connection include. 12)

a) Information on emigrants from receiving countries can only be acquired from countries that have conducted population censuses that separately code and tabulate persons from the countries under consideration. In African countries, however, it is usual for the coding and tabulation of the foreign-born, especially of the African population, not to be done in fine details. For example, in Tanzania, for the 1978 population census, only eight African countries located in Eastern and Central Africa were listed

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12) T.J. Makannah, "Collecting Data on International Migration by Direct Measurement," IUSSP, African Population Conference, Dakar; Vol.1 (Liege: 1988)
for the birth place question. The remaining countries were classified as: (i) other African countries; (ii) countries outside Africa; and (iii) unknown.13)

b) The cross-sectional information on emigrants refers to the dates of the census in the receiving countries. It is rare for the census years of such countries to coincide with the census years of the countries interested in the emigration statistics, given the variety of census dates adopted by African countries. This factor complicates the interpretation of comparative international migration studies which depend on this data set.

B. Problems with the measurement of female migration

32. Migration research in Africa, and elsewhere, have concentrated on male patterns, determinants and consequences, because of two main reasons.14) Firstly because of the emphasis on economic factors as dominant in the migration decision-making process and the belief that the decision to migrate are predicated on the activities of the male, invariably, head of the household. The second reason is methodological and is related to the data collection technique adopted in African countries. These two themes are elaborated below.

33. In this connection, is should be noted that population census data provide the opportunity to tabulate separately various migration measures for females and males, depending on the questions included. Also, census data facilitate cross-classification of socio-economic variables collected with the migration data as well analyses on female/male differentials. As pointed out earlier, cross-classifications of socio-economic variables and the migration measures of population censuses however, have been rare in African countries.

34. However, the most intractable problem with the measurement of female migration is the use of the concept, household in population censuses and sample surveys as the basic unit of data collection. This approach introduces biases in the data on female migration in two ways. Firstly, the respondents in such inquiries are usually the heads of households; in the majority of cases, males, who may not know the answers to some of the questions for female members for such questions: place of previous residence, duration of residence and place of birth.

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13) W.Mlay, "Migration: An Analysis of the 1978 Census," in United Rep. of Tanzania, 1978 Population Census, Vol.VIII, Dar es Salaam: Bureau of Statistics, 1974

14) S. Goldstein, op.cit

Secondly, the use of the household places hindrances in understanding aspects of migration in which it is important to know the roles of various individuals and groups such as the family. This issue will be taken up in the study of problems of determinants of female migrations.

C. Problems of African usages of migration definitions, concepts and classifications

1. Field inquiry definitions, concepts and classifications 15)

35. The measurement of migration in field inquiry (i.e. population censuses and surveys) is made possible by the inclusion of questions such as: place of birth, duration of residence; place of previous residence, place of residence at a fixed prior date and nationality. In addition, for sample surveys, which provide the opportunity to analyse migration in greater details, other migration questions can be included, such as the migration history questionnaire.

36. The types of migration measures along with their disadvantages of some of the mentioned questions have been summarized in table 1. Therefore, the discussion that follows will only highligh problems of African usages of these questions, as well as the definition of migration and the migration history question.

a. Problems with the definition of migration

37. The concept of migration presents problems of definition, as it encompasses, among other characteristics, space and time, which are based on a continuum. With respect to space migration involves simultaneously two localities: an area of origin, and an area of destination. Other spatial concepts that have been used for the definition of migration include physical distance, type of origin/destination, especially whether rural or urban and economic opportunity.

38. The difficulty with the temporal aspects of the definition of migration centres around the length of stay continuously in the destination or absence from the origin. For some authors migration must involve a sustained or permanent relocation in the place of destination. But others have also argued that the time period required for a person to qualify as a migrant should be flexible and determined for each individual case, taking into account the purpose of the data collection.

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15) Economic Commission of Africa, "Concepts, Definitions and Classifications of Internal Migration in Africa", Statistical Information Bulletin, E/ECA/SIB.15) and "Concepts, Definitions and Classifications of International Migration Statistics in Africa", Statistical Information Bulletin, E/ECA/SIB.17.

Table 2: Types of migration measures that can be derived from selected questions used in field inquiry

	Question	Type of migration measures	Main advantages and disadvantages
1.	Place of birth	Lifetime in migration by place of origin; Lifetime outmigration by place of destination Net balance of Lifetime migration between any 2 places Foreign-born population by country of birth, age and sex; Data from more than one census can be used to estimate net intercensal immigration.	Advantages: The question is easily understood; provides the geographical configuration of migration. Disadvantages: Timing of migration unknown; exclusion of return migration.
2.	Duration of residence	Immigration by duration of residence in country, place of enumeration and major civil division, age and sex.	Advantages: Takes care of return migration; provides the timing of the last move. Disadvantages: Migration cohort may be decimated by remigration and deaths- factors influenced by duration of residence.
3.	Place of previous residence	Immigrants by place of last residence. Out-migration by place of present residence; net balance of migration between any 2 places	Advantages: Provides information on direct moves; otherwise similar to Question 1. Disadvantages: Lack of time reference.
4.	Place of residence at a fixed prior date	Immigrants by place of residence x years ago. Outmigrants by place of present residence, net migration between places	Advantages: Migration time span is clear. Disadvantages: Persons born during the interval not included.
5.	Nationality (citizenship)	De jure international migration information.	Advantages: Could be used to cross check informaton on birth place. Disadvantages: Poor reporting, especially among undocumented immigrants. Not useful for any rigorous analysis of migration for above and other shortcomings.

Adapted from: Zachariah, 1977; and United Nations, 1980a.

39. In addition, some writers advocate that the definition of migration should reflect factors such as the psychological, economic, social and demographic attributes that shape the movement.

40. For this reason, the simple definition of migration as a change of residence from one civil division to another has much to recommend. From the information on duration of stay, if a question on this item is included in the inquiry, further temporary classification are made.

41. From this definition, a movement is classified as internal migration when it is confined within the same country and international migration when it involves the crossing of a national boundary. But the use of civil division for the definition of especially internal migration which involves movements over a variety of boundaries, such as major as well as minor civil divisions, cities, towns, villages, provinces and districts is too restrictive. To take account of these sub-divisions of countries, for the purpose of data collection, tabulation and analysis, the concepts migration-defining area can be substituted for civil divisions in the above definition.

42. A review of concepts included on national definitions of internal migration indicated that among the seventeen African countries that responded, the majority nine, used the concept migration-defining area and migration interval, while three used minimum period of presence or absence. This review also revealed that a wide variety concepts were been employed by African countries in their definitions of internal migration 16)

43. Attention will now focus on African usages of concepts, definitions and classifications of questions included in field inquiries.

b. Birthplace 17)

44. This is the most popular question used by African countries for the measurement of migration in population censuses. In the 1970 and 1980 rounds of African censuses, 86 and 94 per cent respectively of the responding ECA member states included this question on their questionnaires (see table A.1 and A.2).

45. The concept is fairly easy to understand. The major problem with it pertains to the geographical and/or political division (i.e. the migration -defining area) of a country that should be provided by respondents and tabulated. When localities are used as the migration-defining area, it is possible to code and tabulate origin localities as either rural or urban. But a

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16) United Nations "Statistics on Internal Migration," op.cit.

17) ECA, "Study on Methods and Problems..." op.cit.

number of considerations such as the large number of localities, even in small countries as well as the transient nature of rural localities, with a number bearing identical names would complicate enumeration, coding and tabulation.

46. Another problem with the concept in past population censuses is that some undocumented aliens have been known to have deliberately falsified answers (and to the related question on nationality).

47. Also, some countries have defined the birthplace as the place of usual residence of the respondents' mother to provide more relevant data for the tabulations on internal migration. This has happened in countries where it is customary for expecting mothers to go to their maternal homes, away from their usual places of residence to give birth. The concept, usual residence of the mother, is more complex than birthplace.

c. Duration of residence

48. This question was included by about one-third of the responding ECA member states on their questionnaires for the 1970 and 1980 African population censuses (see table A.1 and A.2). The two main problems encountered relate to recall lapse and the application of the concept to household members that had interrupted their residence. Also since this is a question that requires respondents to recollect about past lengths of stay in calendar terms, the answers to the question have been found to be affected by "memory lapse and digit preference error in reporting duration..."18)

49. In addition, the following problems have also been encountered: how to classify respondents whose stay in given localities had been interrupted by, for example, absence or stay at an educational institution or temporary assignment; and provision of information on this topic for absent household members.19) With respect to the first problem, a minimum period of absence, usually six months has been designated by some countries as not interrupting residence, although the classification of students who stay away at educational institutions for over six months has remained problematic.

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18) Economic Commission for Africa, "Comparative Evaluation and Analysis of the 1980 Round of African Censuses"; ECA/POP/TP/87/3/2.1(iii), 30 Nov 1987.

19) ECA, "Study on Methods and Problems ...", op.cit

d. Place of previous residence

50. Four out of twenty-one and eight out of forty-eight ECA member states respectively had this question on their census schedules in the 1970 and 1980 rounds of African censuses respectively.20)

51. The question has been given two interpretations in African demographic inquiries. According to the first interpretation, place of previous residence is the previous residence with reference to residence at the time of the census. By the second interpretation, the place of previous residence is specified in terms of duration of stay.

52. Each version of the question has some problems. The problem with the first version, which according to a review of the 1970 round of African census was the more popular concept, is that for the answers to be meaningful, they should be cross-tabulated with the answers to a supplementary question on duration of residence.21) Failing that, migrants of various durations of stay would be combined.

53. The second version of the question has the advantage that migrants could be classified according to various durations of stay-one or five years, for example. However, in the choice of the time period a judicious balance has to be struck between capturing enough migration events and minimising recall lapse and digit preference problems.

e. Place of previous residence at a fixed prior date

54. This question did not apparently feature in the census questionnaires of African countries at the time of the 1970 round of African censuses. However, during the 1980 round, 29 per cent of the countries that participated included the question.

55. The main problem of this question has already been alluded to in the discussion on the question on place of previous residence, namely: the choice of a time period capable of capturing a sufficient amount of migration events and at the same time minimize recall lapse and digit preference.

f. Migration history questionnaire 22)

56. To capture various migratory events during the life cycle of the migrant, the migration history questionnaire is used in sample surveys. The questionnaire usually begins with an important life cycle event - for example, date of birth or entrance into the labour force - of the respondent, with information requested pertaining to all places in which the person had lived for a stated number of months or years.

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20) United Nations, idem
21) ECA, idem
22) Goldstein and Goldstein, op.cit and Findley, op.cit.

57. The major problems of the questionnaire when used in largely illiterate populations such as in Africa, where the majority of people are not familiar with the calendar or the concept of chronological age include: correctly recalling past migration events as well as precisely locating them within a specified time frame. Failure to fulfil these two requirements vitiate the value of data collected from the migration history questionnaire.

III. PROBLEMS OF MIGRATION ANALYSIS

58. Analysis pertaining to migration can be classified into three broad classes. The first approach which is descriptive, attempts to measure the characteristics, patterns and trends of the movements. The second approach focuses on the determinants of the movements and is concerned with the reasons and correlates for the movements. The third approach pertains to consequences of the movements for the individual, household and family as well as the society as a whole. The spatial units of the analyses are the areas of origin and destination. The problems in undertaking analyses for these three approaches are now examined.

A. Problems of analyses of the characteristics, patterns and trends

59. One of the problems with the analyses of the characteristics of migration from African population censuses has been that, in the past, detailed cross-tabulations of the migration measures and other socio-economic variables such as educational and occupational status have rarely been done. According to Zachariah, " with proper cross-classifications, census data are ideally suitable for analyzing migration differentials, as they provide characteristics of migrants and non-migrants at destination."23)

60. In this connection, a problem with relying on census data for analyzing selectivity of changing characteristics should be pointed out. Of interest in such analyses are not just the migrants' (non-migrants') characteristics at the destination at the time of the census but also pre-migration characteristics at the origin before the move. While it is possible to infer characteristics such as sex (which does not change) and age, it is not possible to do so for items such as occupational status, educational attainment and income. Only demographic inquiries that inquire into pre migration events and characteristics by the use of retrospective questions such as the migration history format are able to fill in this gap. However, their results should be assessed against problems of retrospective questions assessed earlier.

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23) Zachariah, op.cit

61. As well, measures of migration from various data collection systems are usually proxy measures of migration - for example, lifetime migrant from the birth place question. Also, migration measures derived from the same source but different questions may differ as well as those from different data collection systems. This complicates comparative analyses of migration.

B. Problems of analyses on the determinants

62. Problems relating to the analyses of the determinants of migration will be tackled from two perspectives - the micro and macro approaches.

1. Micro and Macro approaches

63. The micro approach to the determinants of migration focuses on the individual, the family or household as the unit of analysis. One source of this information is from migration surveys that include questions about the reasons for the migration. The problems with this approach is that some of the replies given are questionable because they confound real with imagined motives for the movements. In addition, post facto rationalization might cloud the answers (Bedford 1975:30)

> Post facto rationalization will dominate responses to questions such as "why did you leave your previous place of resident?); "Why did you move to this place?" As a number of researchers have found, motives adduced by migrants for moves in the past may hide, rather than reveal, underlying causes for movement. 24)

64. Another aspect of the micro approach is represented by the assumptions of economists about individual rational choice in migraiton models. Stated broadly, the approach postulates that an individual moves on the basis of expectations that he will be better off by such movements.

65. There have been two main problems with the application of this approach in African countries. Fristly, due to mainly the inability to empirically conceptualize non-economic factors, especially psychic returns and costs, only strictly economic (that is, measurable) costs and returns have usually been taken into account in some tests of the model. Secondly, it has been

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24) R.Bedford, "The Questions to be asked of migrants" in R. Pryor (ed.) The Motivation of Migration, studies in Migration and Urbanization, No. 1, Australian National University, 1975.

argued that in African societies, "the undue emphasis on economic determinants tends to underplay the roles of non-market factors which are also important. 25)

66. With respect to the approach pertaining to the macro determinants of migration which focuses on the objective characteristics of the geographical or administrative unit and aggregate structural features as the motives for the movement, the prominent examples include economic studies on African countries that use aggregative census or survey data in econometric models. The conceptual and methodological problems of these studies consists of: (a) the high level of aggregation masks other aspects of the movements; and (b) the use of proxy economic variables in the absence of data on for example income and wage levels.

2. Problems of studies on the determinants of female migration

67. A prominent feature of social change in African economies in recent years is the rapid rates of growth of urban localities, especialy the primate cities. Men have for many years formed the majority of persons migrating to these urban areas, although in recent years the numbers of women migrating have been increasing. It is against this background that the formulation and estimation of models on the determinants of female migration should be viewed.

68. In the past, as has been stated earlier, most studies on migration, including those on determinants, have focused on men for two main reasons. They are that (a) men are the main decision-makers when it comes to important issues such as migration, with women considered as associational or tied movers; (b) the determinants and contexts of unattached women, when they migrate, are similar to those of males. 26)

69. Recent research seems to cast doubt on these assumptions. Firstly, there is evidence which shows that for both internal and international migration (especially in West Africa) an increasing number of unattached females are involved which argues for their separate treatment. In addition, there are marked differences between the determinants of female and male migrations - for instance, marital considerations and participation in different tasks in the urban labour market that buttress the above argument for separate treatment of female and male determinants.

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25) G.F. De Jong and R.W. Gardner, Migration Decision Making (New York: Pergamon Press, 1981); and
Lorene Yap, "Internal Migration in Less-Developed Countries: A Survey of the Literature" Washington, D.C., World Bank Staff Working Paper.

26) V. Thadani and M. Todaro, "A framework for the Analysis of Female Migration"; New York: Population Council Center for Policy, 1979.

70. Thadani and Todaro have suggested the following factors that should be taken into account for the migration determinants of women namely: (a) economic factors (income and employment opportunities) (b) marriage considerations and (c) mediating variables impinging on female migration (eg., sex-role constraints) and other factors such as distance, cost, and transport that constrain both male and female migration. 27)

71. Brown has tested the model for Ghana focussing on some of the basic correlates of female migration, namely: marital status and labour force participation. He came to the conclusion that a variety of social and economic conditions influence female migration, with the importance of the factors determined primarily by the women's degree of economic independence. 28)

72. From this review, a number of questions can be raised about the conceptualization of female migration, namely:

(a) How to distinguish female associational migrants from independent female migrants?

(b) Should the migration of these two sets of female migrants be treated in one or separate models?

(c) How should variables, such as wage and income levels, that pertain specifically to female migrants be derived?

(d) Should the model on the determinants of female migration be based on the decision making process of the individual, household or family?

73. A number of researchers have also considered the methodological and conceptual problems of models on the determinants of female migration, and one has remarked with respect to Thailand that

> It is clear that migration studies have not began to reach their full potentials for analyzing motivations for female migration, adjustment problems, migrant needs, information flows, and a complex decision making process. 29)

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27) Thandani and Todaro, idem

28) Edward K.A. Brown, "Patterns of Internal Migration in Ghana with special Emphasis on the Determinants of female Migration," Doctoral dissertation, University of Pennsylvania, 1983.

29) Fred Arnold and Suwanlee Piampiti, "Research and Plicy Review of Female Migration in Thailand", Paper prepared for the Women in Cities Working Group, Honolulu, East-West Population Institute, 1979.

74. Nonetheless, a moderate start could involve, paying attention to female migrants and non-migrants in the analysis and exploitation of data from field inquiries from the various questions included.

C. Problems of analyses on the consequences of migration

75. Issues on migration consequences - for example, the effects of rural-to-urban migration on the rural areas of origin as well as the urban destinations or the effects of migration on fertility levels - are important in African countries. However, researchers in attempting to tackle these weighty issues are faced with an array of conceptual, methodological and data probles. 30)

76. To begin with, compared with dererminants, the literature on the consequences of migration is relatively few. Thus researchers have limited theoretical and empirical approaches to draw upon.

77. A major conceptual problem is disentangling migration related changes from those of other factors - demographic factors, production relationships, drought and desertification, governement policies, etc. - also responsible for changes in social systems. There is no well established methodology for undertaking such a complex assignment. It is clear however that any attempt to understand the consequences of migration should take into account migration events and characteristics for at least two time periods: before the move at the origin and after the move, at the destination. Cross-sectional data, for example, from censuses about migration events and characteristics at the destination, are insufficient to grapple with the problem at hand, namely "Comparison between situations with similiar socio-economic conditions but different levels of intervening migration". 31)

78. But in Africa, most of the research on the consequences of migration that have so far been conducted have relied on either population census data or single round surveys using retrospective questions to elicit information about premigration characteristics and events. The problems with these approaches include the following: recall lapse and changes and depletion of the population by mortality and migration itself. More important, as Oberai has pointed out, cross-sectional comparison of socio-economic characteristics and migration events from censuses and such surveys amounts to "casual empiricism", since from them it is impossible to "distinguish between migration

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30) Alan B. Simmons, "Hypothese and Analytical Approaches for the study is the Demographic and Socio-economic Consequences of Migration", in ESCAP, National Migration Surveys, Vol.X, Guidelines for Analyses" (New York: 1982)

31) idem

included changes and changes induced by other factors." 32) Data collected from a longitudinal survey involving at least two time periods, and also a control group comes near to satisfying the objective.

79. The problems raised will be illustrated by one example: the consequences of migration for fertility. That an increase in rural-to-urban migration usually results, with some lag, in decreases in urban fertility is a finding that has been consistently confioned by several studies. However, there is controversy of the type of mechanism at work because of unsatisfactory methodologies used: assimilation at the urban and due to factors as the urban environment and labour market which are less favourable to childbearing and rearing or spatial (migration) choices which reflect pre migration -formed fertility preferences. Previous methodologies to understand the relationship involved analyses of migrant selectivily based on various fertility measures or correlates of fertility levels rather than systematically attempting to delineate the changes in fertility as a sequel to migration, with attention paid to the timing of births and migration events.

IV. SUMMARY

80. This paper has reviewed aspects of problems of measurement and analysis of internal and international migration statistics in Africa. The review underlined basic deficiencies of concepts and data used for the measurement and analysis of the movements. Prominent among them is the complexity of the definition of migration, encompassing as ir does, both temporal and spatial dimensions among other characteristics. In this connection, the need was expressed for the use of meaningful concepts to classify various movements by scale and sequence, permanent, short-term and circular as well as by motives.

81. Sample surveys such as longitudinal inquiries and utilization of techniques like the migration history questionnaire, supplementing population censuses, were identified as methodologies to effectively address some of these complex measurement problems.

82. With respect to analysis, problems and issues of the micro and macro approaches as well as determinants of female migration were examined. In addition, the major conceptual problem of impact analysis of migration, namely disentangling migration related changes from other socio-economic, ecological, political, cultural factors of change in a dynamic system was reviewed.

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32) A.S. Oberai, "Consequences of Migration for Production and Technology in Agriculture," International Statistical Institue, Booklet Volume II, Invited and Contributed papers, Madril Sept. 12-22 1983.

Table A.1: Geographic and Migration Questions Canvassed in 1970 Round of Censuses (Selected African Countries)

Country	Year	Residence Status	Place of Birth	Usual Residence	Previous Residence	Duration of Residence
Algeria	1966	x			x	x
Morocco	1971	x	x		x	
Libya	1973	x	x			
Sudan	1973		x			
Gambia	1973		x			
Ghana	1970		x			
Liberia	1974	x	x			x
Nigeria	1973		x			
Sierra Leone	1974		x			x
Togo	1970	x	x			x
Congo	1974	x	x			x
Gabon	1970	x	x	x		x
Botswana	1971					
Kenya	1969		x			
Lesotho	1966	x				
Malawi	1966	x	x			
Mauritius	1972		x			
Swaziland	1966		x			
Tanzania	1967		x			
Uganda	1969		x		x	x
Zambia	1969		x		x	
Total	21	9	18	1	4	7

Source : U.N.E.C.A., Study on methods and problems of the 1970 round of African Population and housing censuses. E/CN.14/CAS.10/15. October 1977.

In addition to these questions, there were several other types of questions covered by specific countries. These include:

1. Migration origin: - Togo, Congo, Gabon

2. Relatives abroad: - Malawi

Table A.1: Geographic and Migration Questions Canvassed in 1980 Round of African Censes

Country	Year	Residence Status	Place of Birth	Place of Residence	Residence at	Usual Residence Specific time past	Previous Residence	Duration of	Place of work Residence
Algeria	1977	x	x	x	x			x	x
Egypt	1976		x				x	x	x
Morocco	1971	x	x					x	
Libya	1984	x	x		x		x	x	
Sudan	1983		x			x		x	
Tunisia	1975	x	x		x			x	
Benin	1979		x				x		
Cape Verde	1980		x	x		x	x		
Côte d'Ivoire	1975	x	x			x			
Gambia	1983	x	x			x			
Ghana	1984	x	x						
Guinea	1983	x	x						
Guinea Bissau	1979	x	x						
Liberia	1984		x						
Mali	1976	x	x						
Mauritania	1976	x	x						
Niger	1977	x	x						
Nigeria	1973		x						
Senegal	1976	x	x						
Sierra Leone	1974		x						
Togo	1981	x	x		x				
Upper Volta	1975	x	x						
Burundi	1979	x	x						
Cameroon	1976	x	x			x	x	x	
C.A. Republic	1975		x					x	
Congo	1974	x	x						
Eq. Guinea	1983		x		x				
Gabon	1980		x						
Rwanda	1978	x	x						
Principe	1981		x						
Zaire	1984	x	x					x	
Botswana	1981	x	x		x			x	
Comoros	1980	x	x		x			x	
Djibouti	1983	x	x	x	x	x	x	x	
Ethiopia	1984	x	x	x				x	
Kenya	1979		x		x		x		
Lesotho	1976	x	x				x	x	
Madagascar	1975	x	x					x	
Malawi	1977		x		x				
Mauritius	1983				x	x			x
Mozambique	1980	x			x	x			
Total	41	27	39	4	12	8	8	16	3

Country	Year	Residence Status	Place of Birth	Place of Residence	Residence at	Usual Residence Specific time past	Previous Residence	Duration of	Place of work Residence
Seychelles	1977	x							
Somalia	1975		x						
Swaziland	1976		x						
Tanzania	1978		x						
Uganda	1980	x	x						
Zambia	1980		x		x			x	
Zimbabwe	1982		x		x				
Grand Total	48	29	45	4	14	8	8	17	3

Source: Census questionnaires of respective countries.

In addition to these questions there were several other types of questions canvassed by specific countries. These include:

1. Place of residence utside : - Mauritania, Tunisia and Lesotho.
2. Home place : - Nigeria
3. Origin/Destination : - Senegal and C.A. Republic
4. Duration of absence/visit : - Gambia, Cameroon, Angola, Congo, Botswana, Malawi and Swaziland
5. Motive for settlement : - Congo, Djibouti, Botswana and Cameroon
6. Means of transport for work or study : - Egypt.